

**AMENDMENT TO THE TITLE**

**Kindly replace the title used in the International Application with the following:**

METHOD AND APPARATUS FOR INSPECTING COMPONENT MOUNTING  
ACCURACY

## **AMENDMENTS TO THE SPECIFICATION**

**Please amend the paragraph beginning on page 47, line 16, as follows:**

The state of such alignment is shown in Fig. 10. As shown in Fig. 10, the jig board 7 is disposed with the component mounting-side surface 7b\_7a as the top surface as viewed in the drawing, and its back surface (i.e., the bottom surface as viewed in the drawing) is equipped with the reflecting surface 8a formed by application of the diffuse reflection sheet 8. The jig component 5 is mounted on the component mounting-side surface 7a of the jig board 7 with its irreflexive surface 5a as the top surface as viewed in the drawing. Although a bonding material that is the double-faced tape having optical transparency is disposed in between the reflecting surface 5b that is the bottom surface of the jig component 5 and the component mounting-side surface 7a of the jig board 7 for securing the placement position of the jig component 5, the illustration thereof is omitted in Fig. 10. The board recognition camera 25 disposed above the jig board 7 has lighting units 25a disposed around the image pickup-side front surface (i.e., the bottom surface as viewed in the drawing) for applying image pickup light in downward direction as viewed in the drawing.

**Please amend the paragraph beginning on page 48, line 12, as follows:**

In the state shown in Fig. 10, light W11 is applied in downward direction as viewed in the drawing from the lighting units 25a included in the board recognition camera 25. The applied light W11 reaches the component mounting-side surface 7a and passes (transmits) through the component mounting-side surface 7\_7a and the light transparency material inside the jig board 7, and further reaches the reflecting surface (or the diffuse reflecting surface) 8a formed from the diffuse reflection sheet 8. On the reflecting surface 8a, the light W11 is diffuse-reflected in various directions in almost upward direction as viewed in the drawing, by which reflected light (or diffused light)

W12 is formed. The reflected light W12 transmits through the light transmitting material in such a way that light evenly spreads across almost the entire light transmitting material inside the jig board 7, and further the light transits through the component mounting-side surface 7a and travels toward the board recognition camera 25. More particularly, the light W11 is diffuse-reflected by the reflecting surface 8a of the diffuse reflection sheet 8 to be the reflected light 12, by which the entire inside of the jig board 7 functions as an almost uniform surface light source. In a region where the jig component 5 is disposed in the component mounting-side surface 7a, the jig component 5 formed from a material which does not transmit light blocks the reflected light W12, and therefore the reflected light W12 does not travel toward the board recognition camera 25. Further, the top surface of the jig component 5 mounted on the jig board 7 as viewed in the drawing is made to be the black-colored irreflexive surface 5a, so that the light W11 applied by the lighting units 25a is not reflected by the top surface of the jig component 5. Therefore, the reflected light W12 is applied toward the board recognition camera 25 from a region of the component mounting-side surface 7a other than the region where the jig component 5 is disposed, and an image of an outline of the jig component 5 acquired by the applied reflected light W12, i.e., a silhouette image, is picked up by the component image pickup camera 25 (step S9). Since the reflected light W12 is almost evenly diffused in the jig board 7, the reflected light W12 can be spread across the component mounting-side surface 7a of the jig board 7 which is equivalent to the region where the jig component 5 is disposed. Therefore, in the vicinity of the boundary between the inside and the outside of the outer periphery of the jig component 5 in the component mounting-side surface 7a, transmission and blockage of the reflected light W12 can definitely be distinguished, which makes it possible to provide a clear silhouette image of the jig component 5.

**Please amend the paragraph beginning on page 52, line 8, as follows:**

As shown in Fig. 11, the specular reflecting surface 9 is formed on the lower-side surface of the jig board 10 as viewed in the drawing, and further in the inside of the jig board 10, a diffusion layer 10c exemplifying the light transmitting material which diffuses the light reflected by the specular reflecting surface. Herein, the "diffusion layer" refers to the layer which diffuses incident light when the light transmits through the layer. In the present embodiment, as the diffusion layer 10c, opalescent glass materials may be used for example, and the thickness thereof should preferably be in the range of 1mm to 4 mm, which is almost identical to the thickness of the jig board 10 itself. In the jig board 10 with such a configuration, light W21 applied from the lighting units 25a to the jig board 10 transmits through the component mounting-side surface 10a of the jig board 10 and transmits through the diffusion layer 10c as shown in Fig. 11. When transmitting through the diffusion layer-10c, the light W21 is diffused in various directions. Among the diffused light W21, light with an almost downward traveling direction as viewed in the drawing reaches the specular reflecting surface 9, is reflected in almost upward direction as viewed in the drawing by the specular reflecting surface 9, and again transmits through the diffusion layer 10c as reflected light (or diffused light) W22. The reflected light W22 is again diffused when passing through the diffusion layer 10c and travels toward the board recognition camera 25 from the component mounting-side surface 10a. The light W21 applied to the irreflexive surface 5a of the jig component 5 is not reflected, and further, in the region where the jig component 5 is disposed in the component mounting-side surface 10a, the reflected light W22 is blocked so that it will not travel upward from the component mounting-side surface 10a. Therefore, as with the case of using the diffuse reflection sheet 8 shown in Fig. 10, the reflected light W22 may go out from the component mounting-side surface 10a, thereby allowing an image of the silhouette of the jig component 5 to be picked up by the board recognition camera 25. Moreover, with such use of the diffusion layer 10c, an optical path for diffusion (i.e., thickness of the diffusion layer) becomes larger, and although a

quantity of light in a specified direction is reduced by diffusion, the optical path necessary for diffusion can be increased, which allows light to be diffused more than the case with use of the diffuse reflecting surface 8a, resulting in an advantage that more uniform surface light source can be formed.

**Please amend the paragraph beginning on page 65, line 22, as follows:**

Further, since the reflecting surface 7a 8a has the light diffusion function, the reflected light can be diffused almost evenly in the jig board 7, and therefore the entire background of the jig component 5 can be brightened and function as the surface light source, which allows acquisition of images with clearer silhouette.